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KIJMOWICZ, WILLIAM JOSEPH				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary**Application No.**

10/563,935

Applicant(s)MARTENS, HUBERT CECILE
FRANCOIS**Examiner**

William J. Klimowicz

Art Unit

2627

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 January 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date ____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 3, 6 and 9-11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As per claim 3, the phrase “wherein the groove width of the recording layer of the first recording stack (L0) is in a range from $0.198 * \lambda/NA$ to $0.397 * \lambda/NA$, *in particular* in a range from $0.289 * \lambda/NA$ to $0.347 * \lambda/NA$,” (emphasis added) is vague and ambiguous as to what range the Applicant is intending to claim. Is the range “from $0.198 * \lambda/NA$ to $0.397 * \lambda/NA$,” or is the range “from $0.289 * \lambda/NA$ to $0.347 * \lambda/NA$ ”?

Similarly, claims 6, 9, 10 and 11, the phrase “in particular” claim 3 (line 3); claim 6 (line 4); claim 9 (line 3); claim 10 (line 4) and claim 11 (line 3) (a range in a range type claim) is vague and ambiguous since the resulting claims do not clearly set forth the metes and bounds of the claim. It is uncertain if the narrower range or limitation is a restriction or limitation on the broader range or limitation.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3, 7, 8, 10 and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Muramatsu et al. (EP 1 067 535 A2).

As per claim 1, Muramatsu et al. (EP 1 067 535 A2) discloses a recordable optical record carrier (e.g., FIG. 1) for recording information using a radiation beam having wavelength λ (*any* wavelength, since the claim *does not in any manner limit the length of the wavelength*) and incident on an entrance surface (lower surface of (1) as seen in FIG. 1) of the optical record carrier comprising, in this order: a protective layer (1) facing the entrance surface, a first recording stack (L0) (2), said recording stack (2) comprising a recording layer of an organic dye material and a groove structure (e.g., see paragraph [0017]), a transparent spacer layer (3 and/or (4)) sandwiched between neighboring recording stacks, and a second recording stack (LN) comprising a recording layer (5), wherein the groove depth of the recording layer (2) of the first recording stack (L0) (2) is in a range from $0.241 \cdot \lambda / n_s$ to $0.362 \cdot \lambda / n_s$, where n_s is a refractive index of a material in a land between grooves on the groove structure.

Note that the claim does not in any way specify a wavelength, or range of wavelengths, thus rendering the claim open to all wavelengths of electromagnetic radiation, such that the aforementioned range is met by the structural grooves and lands of Muramatsu et al. (EP 1 067 535 A2); neither is the claim limited the by a material or range for the refractive index of material.

Moreover as well, the claim is drawn to “a recordable optical record carrier” *per se*, and *not a system* of a laser for emitting a particular range of wavelengths.

As per claim 2, wherein the groove depth of the recording layer (2) of the first recording stack (L0) is in a range from $0.289 * \lambda / n_s$ to $0.337 * \lambda / n_s$. See discussion above, wherein no range or limit is imposed on the wavelength capable of impinging upon the recording carrier. Moreover as well, the claim is drawn to “a recordable optical record carrier” *per se*, and not a system of a laser for emitting a particular range of wavelengths.

As per claim 3, wherein the groove width of the recording layer (2) of the first recording stack (L0) is in a range from $0.198 * \lambda / NA$ to $0.397 * \lambda / NA$, in particular in a range from $0.289 * \lambda / NA$ to $0.347 * \lambda / NA$, where NA is a numerical aperture of the radiation beam incident on the optical record carrier. Note that the claim does not in any way specify a wavelength, or range of wavelengths, thus rendering the claim open to all wavelengths of electromagnetic radiation, such that the aforementioned range is met by the structural grooves and lands of Muramatsu et al. (EP 1 067 535 A2); neither is the claim limited the by a material or range for the refractive index of material.

Moreover as well, the claim is drawn to “a recordable optical record carrier” *per se*, and not a system of a laser for emitting a particular range of wavelengths.

As per claim 7, wherein each recording stack further comprises a metal reflective or heat-sink layer (3, 6) arranged on the side of the recording layer facing away from the entrance surface (see paragraphs [0018], [0021]).

As per claim 8, wherein said metal reflective or heat-sink layers (3, 6) are substantially made of a material of the group consisting Ag, Al, Au or Cu (see paragraphs [0018], [0021]).

Again, as it pertains to claim 10, the phrase “wherein the thickness of the recording layer of at least one recording stack at a groove position is in a range from $0.168 * \lambda / n_r$ to $0.336 * \lambda / n_r$,

Art Unit: 2627

in particular in a range from $0.235 * \lambda/n_i$ to $0.302 * \lambda/n_i$, where n_i is a refractive index of the recording layer,” does not in any way specify a wavelength, or range of wavelengths, thus rendering the claim open to all wavelengths of electromagnetic radiation, such that the aforementioned range is met by the structural grooves and lands of Muramatsu et al. (EP 1 067 535 A2); neither is the claim limited the by a material or range for the refractive index of material.

Moreover as well, the claim is drawn to “a recordable optical record carrier” *per se*, and not a system of a laser for emitting a particular range of wavelengths.

As per claim 11, wherein the recording layer (2) of at least the first recording stack (L0) shows a leveling ratio in a range from 0.3 to 0.5, in particular in a range from 0.35 to 0.40, said leveling ratio being defined as the difference between the thickness of said recording layer at a groove position (dG1) and the thickness of said recording layer at a land position (dL1) normalized by the groove depth (d1) - see paragraph [0041].

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims are rejected under 35 U.S.C. 103(a) as being unpatentable over Muramatsu et al. (EP 1 067 535 A2).

See the description of Muramatsu et al. (EP 1 067 535 A2), *supra*.

As per claim 4, Muramatsu et al. (EP 1 067 535 A2) does not expressly disclose at least one additional recording stack between the protective layer and the second recording stack (LN), said additional recording stack comprising a recording layer of an organic dye material and a groove structure and transparent spacer layers sandwiched between the neighboring recording stacks, wherein the groove depth of the recording layer of at least one of said additional recording stacks is in a range from $0.241 * \lambda/n_s$ to $0.362 * \lambda/n_s$.

As it pertains to the phrase “wherein the groove depth of the recording layer of at least one of said additional recording stacks is in a range from $0.241 * \lambda/n_s$ to $0.362 * \lambda/n_s$,” note again that the claim does not in any way specify a wavelength, or range of wavelengths, thus rendering the claim open to all wavelengths of electromagnetic radiation, such that the aforementioned range is met by the structural grooves and lands of Muramatsu et al. (EP 1 067 535 A2); neither is the claim limited the by a material or range for the refractive index of material.

Additionally, as per claim 5, the phrase “wherein the groove depth of the recording layer of at least one of said additional recording stacks is in a range from $0.289 * \lambda/n_s$ to $0.337 * \lambda/n_s$,” does not in any way specify a wavelength, or range of wavelengths, thus rendering the claim open to all wavelengths of electromagnetic radiation, such that the aforementioned range is met by the structural grooves and lands of Muramatsu et al. (EP 1 067 535 A2); neither is the claim limited the by a material or range for the refractive index of material.

Moreover as well, the claim is drawn to “a recordable optical record carrier” *per se*, and not a system of a laser for emitting a particular range of wavelengths.

Again, as it pertains to claim 6, the phrase “wherein the groove width of the recording layers of at least one of said additional recording stacks is in a range from $0.198 * \lambda/NA$ to $0.397 * \lambda/NA$, in particular in a range from $0.289 * \lambda/NA$ to $0.347 * \lambda/NA$,” the claim does not in any way specify a wavelength, or range of wavelengths, thus rendering the claim open to all wavelengths of electromagnetic radiation, such that the aforementioned range is met by the structural grooves and lands of Muramatsu et al. (EP 1 067 535 A2); neither is the claim limited by a material or range for the refractive index of material.

Moreover as well, the claim is drawn to “a recordable optical record carrier” *per se*, and not a system of a laser for emitting a particular range of wavelengths.

Turning now to the limitation of additional recording stacks, Official notice is taken that additional recording stacks (i.e., more than two stacks) in DVD recordable organic-type record-once type recording media, are notoriously old and well known and ubiquitous in the art; such Officially noticed fact being capable of instant and unquestionable demonstration as being well-known.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the recording media of Muramatsu et al. (EP 1 067 535 A2) with an additional recording stack, as is known in the art.

The rationale is as follows: one of ordinary skill in the art would have been motivated to the recording media of Muramatsu et al. (EP 1 067 535 A2) with an additional recording stack, as is known in the art in order to increase the recording capacity of the media, in a manner well known, established and appreciated in the art.

As per claim 9, Muramatsu et al. (EP 1 067 535 A2) remains silent with respect to wherein a thickness of said reflective or heat-sink layers (3, 6) is in a range below 40 nm, in particular below 25 nm.

That is, with regard to claim 9, although Muramatsu et al. (EP 1 067 535 A2) remains silent with respect to the particular claimed ranges, given the teachings and suggestions of Muramatsu et al. (EP 1 067 535 A2) for providing a reliable recording DVD medium, wherein information is written on one side in multiple layers, using the teachings of Muramatsu et al. (EP 1 067 535 A2) as a demonstrative template, it would have been within the skill of one having ordinary skill in the art to routinely modify the thickness of the layers (3, 6) in the course of routine optimization/experimentation and thereby obtain various standard optimized relationships including those set forth in claim 9 as nothing more than a *predictable variation* based the on the overarching teachings of Muramatsu et al. (EP 1 067 535 A2).

That is, given the express conceptual teachings and implied/inferred suggestions of Muramatsu et al. (EP 1 067 535 A2) as a whole, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to routinely modify the thickness of reflective layers (3, 6) in the course of routine optimization/experimentation and thereby obtain various standard optimized relationships including those set forth in claim 9 in order to arrive at a prescribed reflectivity, which would satisfactorily provide the desired and advantageous results of a multiple layered DVD, having two recording layers on a single side, and thus provide nothing more than a *predictable variation* based the on the overarching and pertinent teachings of Muramatsu et al. (EP 1 067 535 A2).

Additionally, the law is replete with cases in which when the mere difference between the claimed invention and the prior art is some range, variable or other dimensional limitation within the claims, patentability cannot be found.

It furthermore has been held in such a situation, the Applicant must show that the particular range is critical, generally by showing that the claimed range achieves unexpected results relative to the prior art range. *In re Woodruff*, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

Moreover, the instant disclosure does not set forth evidence ascribing unexpected results due to the claimed dimensions. See *Gardner v. TEC Systems, Inc.*, 725 F.2d 1338 (Fed. Cir. 1984), which held that the dimensional limitations failed to point out a feature which performed and operated any differently from the prior art.

Additionally, the following 35 USC 103(a) rejections are being made in light of a recent Supreme Court opinion.

The Supreme Court has issued its opinion in KSR, regarding the issue of obviousness under 35 U.S.C. 5 103(a) when the claim recites a combination of elements of the prior art. *KSR Int'l Co. v. Teleflex, Inc.*, No. 04-1350 (U.S. Apr. 30, 2007).

In the decision, the Court reaffirmed the Graham factors in the determination of obviousness under 35 U.S.C. 5 103(a), inclusive of the four factual inquiries under Graham, which are:

- (a) determining the scope and contents of the prior art;
- (b) ascertaining the differences between the prior art and the claims in issue;
- (c) resolving the level of ordinary skill in the pertinent art; and
- (d) evaluating evidence of secondary consideration.

Graham v. John Deere, 383 U.S. 1, 17-18, 148 USPQ 459,467 (1966).

It is noted that the Court did not totally reject the use of “teaching, suggestion, or motivation” as a factor in the obviousness analysis. Rather, the Court recognized that a showing of “teaching, suggestion, or motivation” to combine the prior art to meet the claimed subject matter could provide a helpful insight in determining whether the claimed subject matter is obvious under 35 U.S.C. 103(a).

More noteworthy, however, the Court rejected a rigid application of the “teaching, suggestion, or motivation” (TSM) test, which required a showing of some teaching, suggestion, or motivation in the prior art that would lead one of ordinary skill in the art to combine the prior art elements in the manner claimed in the application or patent before holding the claimed subject matter to be obvious.

The Court noted that the analysis supporting a rejection under 35 U.S.C. 103(a) should be made explicit, and that it was “important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the [prior art] elements” in the manner claimed. The Court specifically stated:

Often, it will be necessary . . . to look to interrelated teachings of multiple patents; the effects of demands known to the design community or present in the marketplace; and the background knowledge possessed by a person having ordinary skill in the art, all in order to determine whether there was an **apparent reason** to combine the known elements in the fashion claimed by the patent at issue. To facilitate review, this analysis **should be made explicit**.

KSR, slip op. at 14 (emphasis added).

No new or unobvious result is seen to be obtained, given the express teachings and motivations, as espoused by Muramatsu et al. (EP 1 067 535 A2) to provide reflective layers to each recording stack on a single sided DVD medium, and as such, the claimed ranges are seen, absent any unobvious evidence, as nothing more than a *predictable variation* based on such overarching and pertinent teachings of Muramatsu et al. (EP 1 067 535 A2), in light of the general knowledge of an artisan having ordinary skill in the art, with the express rationale provided *supra*. See *KSR Int'l Co. v. Teleflex, Inc.*, No. 04-1350 (U.S. Apr. 30, 2007).

Moreover still, the Supreme Court opined “[w]hen a work is available in one field of endeavor, design incentives and other market forces can prompt variations of it, either in the same field or a different one. If a person of ordinary skill can implement a *predictable variation*, § 103 likely bars its patentability.” (Emphasis added) 127 S. Ct. 1727, 1740.

The Examiner finds this situation analogous to the optimization of a range or other variable within the claims that flows from the “normal desire of scientists or artisans to improve upon what is already generally known.” *In re Peterson*, 315 F.3d 1325, 1330 (Fed. Cir. 2003) (determining where in a disclosed set of percentage ranges the optimum combination of percentages lies is *prima facie* obvious). In *In re Aller*, 220 F.2d 454, 456 (C.C.P.A. 1955), it was held that the discovery of an optimum value of a variable in a known process is usually obvious. See also *In re Boesch*, 617 F.2d 272, 276 (C.C.P.A. 1980) (“[D]iscovery of an optimum value of a result effective variable in a known process is ordinarily within the skill of the art.”); *In re Geisler*, 116 F.3d 1465, 1470 (Fed. Cir. 1997) (“[I]t is not inventive to discover the optimum or workable ranges by routine experimentation.” (quoting *Aller*, 220 F.2d at 456)); *In re Kulling*, 897 F.2d 1147, 1149 (Fed. Cir. 1990) (finding no clear error in Board of Patent

Appeals and Interferences' conclusion that the amount of eluent to be used in a washing sequence was a matter of routine optimization known in the pertinent prior art and therefore obvious).

Based on the teachings of Muramatsu et al. (EP 1 067 535 A2) and the skill of one having ordinary skill in the art, the Examiner maintains that the experimentation needed, then, to arrive at the particular claimed ranges in the instant application, is "nothing more than routine" application of a well-known problem-solving strategy, *Merck & Co., Inc. v. Biocraft Labs., Inc.*, 874 F.2d 804, 809 (Fed. Cir. 1989), and the Examiner concludes this is, "the work of a skilled [artisan], not of an inventor." *DyStar*, 464 F.3d at 1371; see also *In re Luck*, 476 F.2d 650, 652-53 (C.C.P.A. 1973) (use of routine testing to identify optimum amounts of silane to be employed in a lamp coating, without establishing a critical upper limit or demonstrating any unexpected result, lies within the ambit of the ordinary skill in the art); *In re Esterhoy*, 440 F.2d 1386, 1389 (C.C.P.A. 1971) ("One skilled in the art would thus manifestly operate the Switzer et al. process under conditions most desirable for maximum and efficient concentration of the acid. The conditions recited in the claims appear to us to be only optimum and easily ascertained by routine experimentation."); *In re Swentzel*, 219 F.2d 216, 219 (C.C.P.A. 1955) ("It may well be that the size represents the largest particles suitable for appellant's purpose, but the determination of that desired size under the present circumstances involves nothing more than routine experimentation and exercise of the judgment of one skilled in the art."); *In re Swain*, 156 F.2d 246, 247-48 (C.C.P.A. 1946) ("In the absence of a proper showing of an unexpected and superior result over the disclosure of the prior art, no invention is involved in a result obtained by experimentation."); "the prior art would have suggested to one of ordinary skill in the art that this

process should be carried out and would have a reasonable likelihood of success.” *Merck*, 874 F.2d at 809 (quoting *In re Dow Chem. Co.*, 837 F.2d 469, 473 (Fed. Cir. 1988)).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William J. Klimowicz whose telephone number is (571) 272-7577. The examiner can normally be reached on Monday-Friday (7:30AM-6:00PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William R. Korzuch can be reached on (571) 272-7589. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/William J. Klimowicz/
Primary Examiner, Art Unit 2627